INTELLOFAX 21 CENTRAL INTELLIGENCE AGENCY REPORT NO. [redacted] 25X1

INFORMATION REPORT

CD NO.

COUNTRY USSR (Dagestan ASSR)

DATE DISTR. 18 March 1952

SUBJECT Dvigatel-Stroi Armaments Plant No. 182 Near Makhachkala

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THIS IS UNEVALUATED INFORMATION

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1. The Torpedo Works were located on the coast of the Caspian Sea, southeast of Kaspiisk (Caspikh) also called Sozgorod, 15 to 18 km southeast of Makhach Kala (42°58'N/47°27'E). The plant area was about 1 km square extending along the coast. A conspicuous landmark was the torpedo launching platform about 3 km off the coast. (2)

2. The town of Caspikh or Sozgorod was built as a place of exile in the late twenties. (2) The exiled persons helped in the construction of the torpedo plant, which, in its present state, was completed in the mid-thirties. According to the Russians, work on the production of depth-charges was started in 1938. After the evacuation to Caspikh of a Leningrad plant in 1941 the manufacture of torpedoes was begun. In 1946, the manufacture of shells, which had also been started during the war, and the manufacture of depth-charges were discontinued. (3) In 1946, the machinery of the plant was modernized and supplemented by technical equipment dismantled at the Julius Pintsch Plant in Fuerstenwalde on the Spree River. In 1946, the settlement of the exiles was declared an open city and given the name of Caspikh. Although the barbed wire fences enclosing the town lost their former importance, a rigid control of the population was maintained.

3. A sketch of the plant layout roughly representing the status in the fall of 1948 was obtained. (4) The total work force was estimated at 5,000 to 6,000 workers, including approximately 500 percent women. Work was done in three shifts of equal strength. Until March 1946, 1st Captain Sorien (fnu) was reported as manager of the plant; his deputy was one Mikhailov (fnu), a civilian; 3d Captain Zvyetushov (fnu) was head of the torpedo acceptance section, while Captain Arkhangelsk was political officer. Director Sorien was replaced by Bela Glaser, a civilian. A group of German specialists was also employed at the plant. Some of them, allegedly former Junkers personnel, lived with their dependents on the southern outskirts of Caspikh. Chief of this group was Herr Mika (fnu); the most important expert was graduate engineer Valerius (fnu). (5) Foremen Wiedemann or Lichmann (fnu), Gruber (fnu), and Schleicher (fnu) were also attached to this organization.

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4. 21 " Naval torpedoes, driven by heated compressed air, were manufactured at the plant. The torpedoes were fitted with an ear mounted on an iron plate that made them attachable to aircraft. However, the presence of stabiliser fins or similar devices was not noticed. (5)

5. The sheet metal delivered for the manufacture of the torpedo heads were rolled, bent and seam welded in workshop 2. The roughly machined heads were then delivered to workshop 11 where they were turned, milled, bored and mounted. Originally, the Soviet torpedo heads were almost hemispherical, but later they were given a more slender and pointed form following the German models. The nose of the torpedo had an aperture provided with a 60-mm thread having a pitch of 3 mm. In practice torpedoes this opening was closed by a cap, while warheads had their detonators fitted there. Only practice and experimental torpedo heads of types BSN, AUS, and BAUS were manufactured at workshop No 11.

6. Description of the torpedo heads:

a. Model BSN. (7)

The hollow upper section of the head contained a wooden box covered with copper sheet. Through openings in the outer shell, fins and apparatus were inserted into a sheet metal container soldered to the shell. A measuring instrument fitted with a three bladed wheel with one wheel projecting beyond the shell of the torpedo was inserted into one of the openings. This instrument which was believed to be a speedometer consisted of clockwork. The torpedo head fitted with measuring instruments was balanced on scales, the weight of the front or rear sections being adjusted with lead if that proved necessary. This was done since these heads were used for experimental purposes. The current production numbers were punched into the finished heads. In August 1915, No 30 was seen; and in March 1917, No 830 was reached. Only few heads were returned after firing tests because they were not watertight.

b. Model AUS (with a fourth letter which was not pronounced) and Model BAUS (7)

In addition to the usual connecting screws, there were six holding devices spread over the circumference of the shell securing a rigid connection between the head and air flask. (7) Externally the heads of the AUS and BAUS type torpedoes had the same configuration as the BSN torpedo. They, too, were practice heads. At the nose there was a thread for the reception of a sealing screw or a carrying ear. This thread corresponded to that holding the detonator in the warhead. The center of the wall separating the head from the air flask of the AUS and BAUS type torpedoes had an opening, holding a brass thumb screw. This screw was provided with a centric hole through which an air valve led from the air flask to the head. The valve was fitted with a spring which would open it as soon as the pressure in the air flask had decreased to six atmospheres. The front section of the torpedo was filled with water which is removed by the compressed air. On the AUS torpedo the water left the torpedo through a valve near the nose. This valve was activated at a pressure of about three atmospheres. To make sure that all water will be removed from the front section the lowest part of the hollow space is connected with the valve by a tube fitted with a sieve. If the mechanism functions properly the water must be pressed out within nine seconds. The water outlet valve was tested by a manometer fitted in one of the upper holes of the torpedo nose. The manometer was gauged for 12 atmospheres; it was also used to find out whether the head of the torpedo was still watertight at a pressure of eight atmospheres. A tin could be fitted in the opening behind the water valve. Its lid was pierced by a small hole which could be closed by a rubber seal mounted on a double-arm lever. The other end of the lever was fitted with a brass disk which, when pressed back by the rushing water, released the rubber seal at the opening of the tin case. This device represents the usual calcium carbide tin. (7) The tins of the returned heads were filled

with a layer partly rusty and partly white like flour. When testing torpedoes, the manometer was replaced by a tin with a handle, the interior of which was fitted with a clockwork. The interior of the heads of this type of torpedo was strengthened by longitudinal and ring-shaped stiffeners. While the heads of the BSN torpedoes were painted red or yellow, the heads of the AUS and BAUS type torpedoes were painted red only. An iron plate with six screws could be attached to the upper section of the torpedo at the welding seam of the air flask. This plate was fitted with an eye, which, according to the Russians, is used for the suspension of the torpedoes from aircraft. (7)

7. Characteristic features of the BAUS model.

The interior of the torpedo was fitted with a trimming weight. The foremost part of the nose was filled with lead-tin mixture. Only some of the heads of the BAUS type torpedo were still fitted with holes for the installation of carbide tins. The head of the BAUS torpedo was heavier than the heads of the other types of torpedoes. Its device for the regulation of the compressed air and removal of the water was simpler. The heads of several German torpedoes were also **disassembled** for testing purposes. They also contained similar devices for the removal of water. One head from 80 to 90 cm in diameter was particularly remembered. (8) The air flask and tail section of the torpedo were not seen. Source stated that these heads came from Arma Abt and were returned there.

8. The tail sections of the torpedoes were machined in workshop No 9 (9). When they arrived at the plant, the conic tubes whose walls were about five mm thick were covered with rust. The rusty spots were burnished at lathes and sometimes even turned so that their walls ultimately had a thickness of about 3 mm.

25X1 [redacted] the tail sections were made of sheet steel which was easy to machine. A recess 10 cm long and 1.5 cm wide was cut into the tail section and a lever with a sliding thorn was inserted into it. (10) Eight holes for screws were also bored into the shell. Then the torpedo tube was placed into an acid bath where it remained for some hours. This was also done in workshop No 9. When the tube was removed from the acid bath it had a coat looking like hoarfrost. On a special lathe the tube was polished so that it lost its coat of hoarfrost. Next a body with a system of brass rods in its interior fitting exactly into the hollow tube was inserted. The front opening of this body was provided with a thread permitting this piece to be screwed to the air flask. The body had the same recess as the outer hull and was fastened to the outer hull by screws. Then the brass rods, which were 60 to 70 cm long and about 6 mm in diameter, were installed in the inner body a brass plate fitted with a sliding thorn was attached. The purpose of the thorn could not be determined. Thereupon four stabilizing fins were welded upon the shell, angular sheet steel 2 mm thick being used for this purpose. The four fins were 20 to 30 cm. long and projected some cm beyond the end of the torpedo. They were arranged crosswise.

9. The propeller blades were delivered individual units; they were made of sheet steel, had a length of 30 cm and a thickness of 4 mm at their ends. The torpedoes were fitted with three-bladed propellers, the blades being welded upon a hollow hub. The pertinent work was done in workshop No 1 where the propellers were also balanced on a test stand. From one-half to two-thirds of the propellers tested required additional machining or proved to be scrap.

10. Rate of production:

25X1 [redacted] estimated that in the summer of 1940 the plant had a daily output of three to four torpedoes. (11) Except for one model, which roughly corresponded to the German G 7 A-type torpedo, no other models were manufactured in quantity. In workshop 25, a minor installation, pressing irons, door locks and other household goods were manufactured. From the German engineers

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employed at the plant it was learned that they had the order to develop a torpedo engine operating on gasoline. They said that they had worked on such a project in Germany. This work was done in workshop No 16 where the test pieces were manufactured. The engineers expected to be transferred to Feodosiya soon to continue their experiments there. (12) The plant had a factory power station with a boiler plant equipped for oil firing. Steam turbines and generators were seen; details are, however, not available. The power station was also equipped with an open-air transformer plant supplied by a power station in the mountains. US firm plates were, allegedly, seen at the transformer plant.

25X1 [redacted] Comments.

(1) [redacted] 25X1

(2) [redacted] does 25X1
not record either of these two names.
For location of the torpedo plant, see Annex 1. 25X1

(3) The exact date when the production of depth-charges was stopped cannot be determined. It is believed that this did not take place before 1947.

(4) For layout of the torpedo works, see Annex 2. [redacted]

25X1 [redacted] concordant data; the sketch is believed to be fairly correct.

(5) The names of the members of this small Junkers organization were previously known. Under the supervision of Professor Holfelder, it developed a torpedo fitted with a cyclic engine in Dessau. (Project Cornulius). Experimental models of this engine were completed. It is believed that these experimental engines and the German experts who had worked on them were transferred to the U.S.S.R. However, the construction records and the pertinent calculations have probably not been secured by the Russians.

(6) It is not proved whether this ear was actually used as a suspension device for transport by aircraft or whether it was designed for better handling generally. It seems possible, however, that the same type of torpedo was used both as a naval and air torpedo, the difference between them being recognizable only from their different heads.

(7) For sketch of model BUT torpedo, see Annex 3, Sketch A.
For sketch of model AUS torpedo, see Annex 3, Sketch B.
For sketch of holding device, see Annex 3, Sketch C.
For sketch of clamp and compressed air container, see Annex 3, Sketch D.
For sketch of torpedo attachment, see Annex 3, Sketch E.
For sketch of carbide tin, see Annex 3, Sketch F.
For sketch of substitute for the manometer, see Annex 3, Sketch G.

(8) These data may refer to the head of a gasoline-driven torpedo as developed by the Cornelius Project since these torpedoes had a much larger diameter than the standard torpedo of 21 ". Also in this connection it was indicated that the torpedo testing station proper was in Alma Ata.

(9) For sketch of tail section of torpedo, see Annex 4.

(10) For sketch of recess in outer hull and inner unit, see Annex 4, item E.

(11) Although an output of three to four torpedoes per day may appear low, these data are believed to be correct. A total of about 300 heads were reportedly manufactured from the summer of 1945 to March 1947.

(12) A torpedo range constructed prior to World War I was located in Feodosiya (45°01'N/35°24'E). It is believed that this range was reconstructed.

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[redacted]

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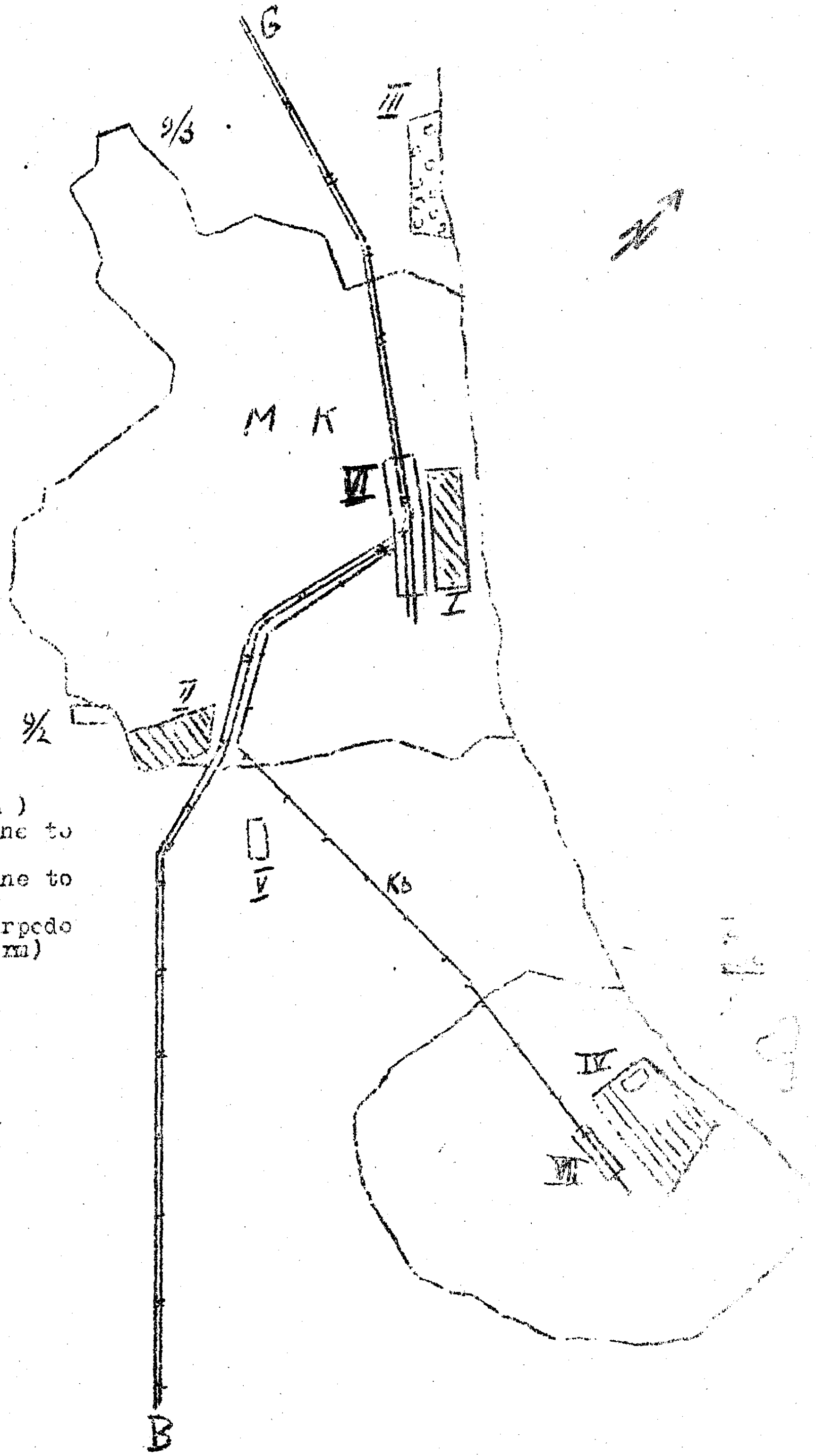
Attachment

[illegible]



Legend:
M K Makhach Kala
C Caspikh (Sozgorod)
G Main railroad line to Grozny
B Main railroad line to Baku
J Small island (torpedo launching platform)
Z Target ship
I Fasheva Zavod I
II Fasheva Zavod II
III Oil Dump
IV Torpedo plant
V Brick works
VI Shunting station
VII Railroad station

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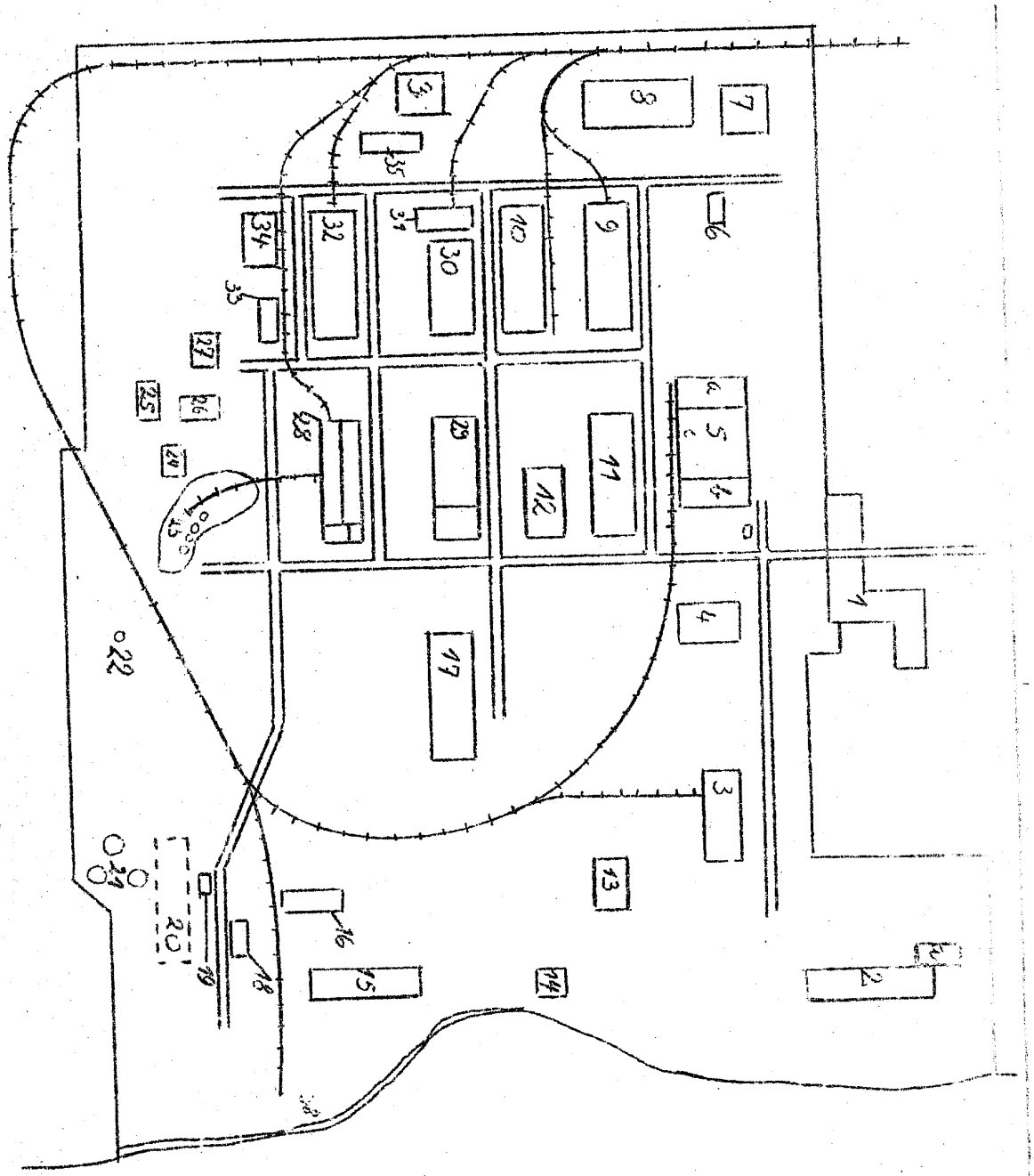
Attachment 2



For legend, see attached list

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Attachment 2

Legend:

1. Administration and designs office.

2)
2a) Factory power station and transformer plant.

3 Workshop 11, production of torpedo heads.

4 Workshop 12, electric shop equipped with testing devices.

5a Workshop 25, manufacture of household goods.

5b Workshop 7, lathe department for non-ferrous metals, production of bolts and screws.

5c Testing room for torpedoes (?)

6 Building, no details available.

7 Wood drying plant with four drying chambers.

8 Workshop 10, carpenter's shop.

9 Workshop 18, lathe department; machining of drive and steering units.

10 Workshop 17, warehouse.

11 Workshop 5, tool maker's shop with hardening shop and laboratory equipped for materials tests. The building also housed workshop 4, which was off limits to all PWs. Manufacture of bronze and brass parts.

12 Compressor plant.

13 Old pumping plant equipped with two pumps.

14 New pumping plant under construction.

15 Building, presumably storage of torpedoes.

16 Laboratory for German engineers.

17 New building with concrete bases for machinery. Not yet completely furnished.

18 Production of soda water.

19 Storage of sheet rough castings, manufactured during the war.

20 Oil dump with underground tanks.

21 Three above ground tanks.

22 Undetermined.

23 Shavings dump.

24 Dump for non-ferrous metal scrap.

25 Tools shed.

26 Small factory office.

27 Polishing shop equipped with sand blast apparatus.

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Attachment 2

28 Building with several workshops, including workshop 1 (torpedo engines) and workshop 9 (manufacture of air flasks).

29 Large building housing workshop 6 (regulation of torpedoes), workshop 4 (turning of torpedo engines and steering units), and workshop 25 in operation since 1942 (automatic lathes for the manufacture of screws and nuts).

30 Workshop 2, foundry equipped with furnaces for brass castings and one furnace for steel castings.

31 Molding sand dump.

32 Workshop 2, forge.

33 Workshop 26, until 1947 production of depth-charges, then manufacture of household goods. The manufacture of buoys was also observed.

34 Shipping section. Most of the crates were lettered Leningrad.

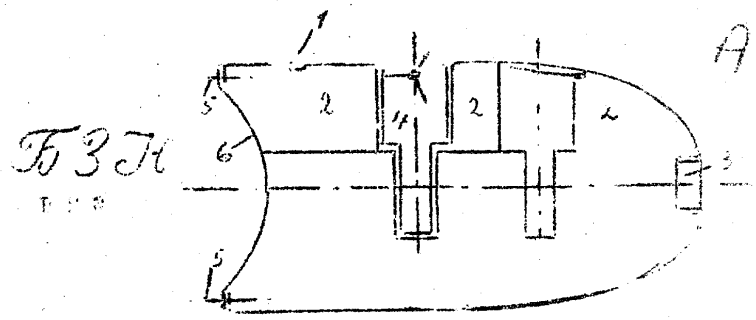
35 Assembly shop.

36 Torpedo range.

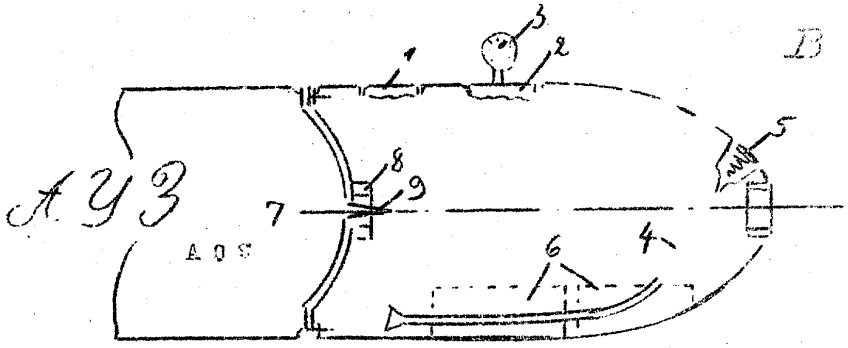
37 Torpedo loading plant.

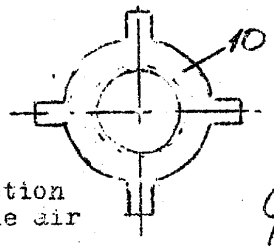
Detail Sketches of Torpedo Heads Manufactured in Czechoslovakia

A. Torpedo Head of Type BSN

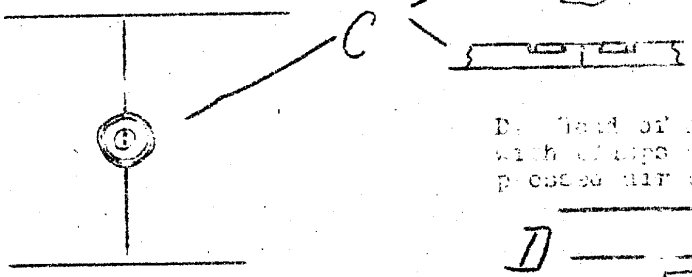


B. Torpedo Head of Type AUS

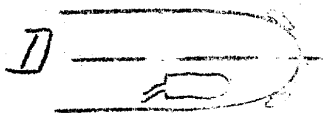




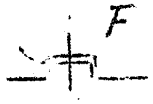
C. Holding device securing the rigid connection between the head and the air flask



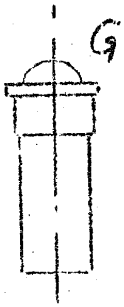
D. Head of a German torpedo with drops and [illegible] pressed air container



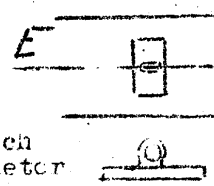
F. Upper section of carbide gun



G. Box with clockwork which took the place of the manometer in model AUS torpedos



E. Head of a Soviet torpedo with device for [illegible] in the air-proof



For legend, see attached list.

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Attachment 3

Legend:

A. Torpedo Head of Type BSN.

1 Holes in the shell.

2 Wooden part covered with sheet copper.

3 Cap; in warheads: pistols.

4 Measuring instrument with three-bladed wheel.

5 Twenty-one fastening screws connecting the head with the air flask.

6 Bottom of torpedo head.

B. Torpedo Head of Type AUS.

1 Opening with cap.

2 Opening with manometer.

3 Manometer.

4 Water outlet valve.

5 Discharge valve of the water outlet valve.

6 Trimming weights.

7 Air flask.

8 Brass screw with four wings and a bore hole.

9 Valve.

10 Detail sketch of item 8 on an enlarged scale.

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Attachment 2

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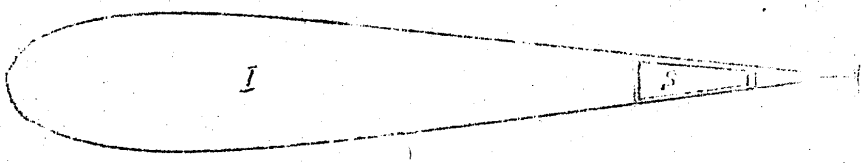
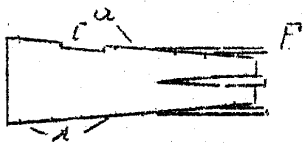
Detail Sketches of Torpedo Parts





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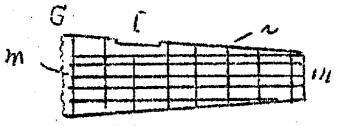

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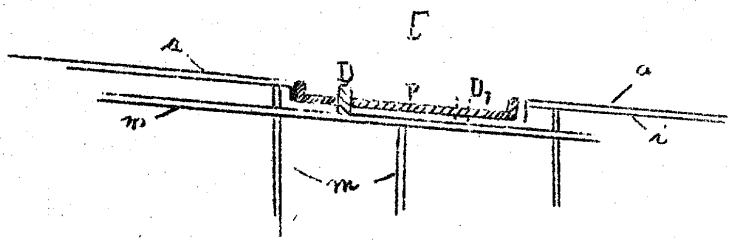
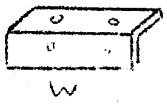


IV



V

Legend:

S Torpedo tail as worked upon by source, about one meter long, diameter at head 35 cm; at bottom 20 cm
a Outer hull
i Inner unit
F Stabilizer fins
E Recess in outer hull and inner unit
G Thread
t Holding screws
m Brass rods in inner unit
$D-D_1$ Sliding thorn
P Plate with thorn attached to it
w Angular sheet steel

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